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When is social protection productivity-enhancing?

Costs and benefits on economic performances

Federico Tomassi *

Abstract

This work aims to contribute to the contingency view of the relationships between social protection and economic performances, by exploring under what conditions social expenditure is productivity-enhancing or not. Well-designed welfare states and fit socio-economic contexts can yield direct and positive relationships between equality and efficiency. Social expenditure plays a twofold role: short-term financial cost notably in traditional economic sectors, and long-term social investment especially in innovative sectors. Some structural variables matters: distance from the world technological frontier, share of productive expenditure, effectiveness of social expenditure, degree of economic and financial globalisation, discount rate of expected future benefits.

Keywords: productivity, social expenditure, welfare state.

JEL classification: E62, H55, I31.

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1. Introduction: equality and efficiency

There is a wide literature about the effects of social protection and the welfare state on economic performances, but theoretical works show different outcomes according to different hypotheses about the role of welfare systems. These relationships are crucial in understanding whether individual and social welfare can be protected from the increasing risks we meet in the global economy, marked by ITC revolution and consequent changes in jobs and skills, growing interdependence of productive and financial markets, emergence of new competitors.

Because of the trade-off between equality and efficiency, one could expect social protection – and notably its public pillar – to be an even heavier cost for the even increasingly global economy. Large welfare states and social equality are at odds with economic performances, and the latter decreases when the former increase. Freed from fiscal costs and public regulation, markets could better reduce disincentives, favour economic growth and satisfy social needs: economic growth trickles down wealth, guaranteeing social justice. Social protection is a black hole, a leaky bucket where resources accumulated during economic growth are wasted, so that searching for equitable ‘slices’ reduces the dimension of the ‘cake’ (Okun, 1975).

There are macro- and micro-economic issues against social expenditure. The former are (i) financial inconsistency related to public debt and expectations of international investors, and (ii) the burden on the prices of goods and services when globalisation imposes greater international competition and social dumping. Micro-economic problems are (iii) reduction of individual responsibility by limiting freedom of objectives and enjoyment of one’s own effort, and (iv) non-market failures caused by agency problems and political-electoral cycles.

However, the economic mainstream relies upon hypotheses which do not represent long-term economic and social relationships, but only short-term financial sustainability of social spending. Some scholars consider social protection merely as an income redistribution from productive to unproductive classes, e.g. from working to retired people (Alesina and Perotti, 1997) or from successful to unsuccessful individuals (Hassler *et al.*, 2003). From an analytical point of view, such models assume that advanced economic systems are situated on the frontier of the transformation curve and therefore every public intervention represents a zero-sum game displacing resources between sectors or individuals¹.

Recent theories stress more complex relationships between economic and social issues. First, trickle-down is not so obvious, as is demonstrated by growing inequalities in the advanced countries in the last 30 years although they have seen economic growth. Second, some conditions for perfect competition to hold are not met in our real world – due to heterogeneity of individuals, aversion to risky activities, second best outcomes, uncertainty and information asymmetries – jeopardizing the feasibility to protect people from increasing risks (Barr, 2001: ch. 2). Third, social protection represents not only consumption or redistribution among individuals (‘Robin Hood’), but also insurance not efficiently provided by private markets and redistribution over the life cycle (‘Piggy Bank’) (Barr, 2001: ch. 1). Fourth, according to the concepts of capabilities and functionings, social protection provides individuals with wider liberty of choice and more opportunities of participation in economics, politics and social life (Sen, 1992; 1999).

¹ There are shortages of physical and social resources, contrary to the Keynesian approach which suggests that economic policies could increase the use of both labour and capital, i.e. they could move the economy from inside to a point closer to the frontier.

Economic growth could even have no positive effects on individual and social well-being, to the extent that: (i) well-being depends on relative incomes rather than absolute incomes, provided that basic needs are fully satisfied, and (ii) the scale of the economic system becomes too big to ensure that social costs are lower than social benefits, harming the feasibility of a sustainable development (Daly, 1996).

Empirically, the equality-efficiency trade-off does not hold, since many econometric analyses do not show any conclusive or significant evidence that social expenditure or taxation levels are correlated with economic performances: outcomes are uncertain, often not significant or unrealistic (Atkinson, 1999: ch. 2, Lindert, 2004b: 82-99). Via well-designed social protection systems, there can be direct and positive relationships between equality and efficiency (Lindert, 2004a: 235-263). Social protection can even be considered as a long-term ‘social investment’ in exchange for taxes (Esping Andersen, 2002: 9-10), or as a ‘productive factor’ contributing to political stability and economic dynamics (Fouarge, 2003: 35).

To overcome the inconclusiveness of empirical analyses focused only on spending levels, some scholars suggest that the structure of social protection matters, i.e. its institutional details (Atkinson, 1999: chs. 1-2) and its recasting according to external pressures (Ferrera and Rhodes, 2000; Pierson, 2001: 419-427). The relationship between social expenditure and economic performances could be contingent on national socio-economic and institutional contexts: history, economic policy choices, laws, finance system, labour market, corporate governance, productive specialization (Crouch and Streeck, 1997; Barr, 2001: 268-270; Rodrik *et al.*, 2004). As Gough (1996) points out: *‘Different welfare regimes exhibit different configurations of effects on performance and structural competitiveness. A problem in one may be a solution in*

another'.

In order to contribute to the contingency view, this paper aims to explore under what conditions high social spending undermines economic productivity and when, conversely, large and well-designed welfare systems are consistent with it. A coexistence of positive and negative effects of social expenditure is assumed in a dualistic economic system composed by an advanced innovative sector, in which welfare systems imply benefits larger than costs, and a traditional imitative sector, in which just the opposite holds. Such a formalization helps to stress some country- and time-specific conditions under which social and economic benefits are higher than financial costs.

This paper could contribute to redirect the current debate on equality and efficiency, which lacks satisfactory explanations of outstanding stylized facts: the possibility for both residual and social-democratic welfare states to be strong innovators, and the great difference in taxation and social expenditure levels between the advanced countries, with no empirical evidence of convergence.

The paper is organised as follows. The second section reviews some channels by which welfare system elements are positively linked to social and economic performances. The third section sketches the analytical formalization of a dualistic economic system, where social spending yields both positive and negative effects on productivity, depending on some structural variables. In the fourth section such a framework is applied to the contingent circumstances of the U.S. and Europe. A short empirical analysis follows in the fifth section, shedding light on the above stylized facts.

2. Economic, social and welfare systems

There are complex relationships between welfare state elements, social issues and economic performances. Social protection can improve economic indicators both directly and indirectly. Two lines of research suggest a direct relationship. The ‘costs of non social policy’ approach stresses that social protection provides immediate and dynamic savings (Begg *et al.*, 2003; Fouarge, 2003). The ‘varieties of capitalism’ approach highlights that different economic systems are fit to specific welfare system structures and workers’ skills, taking advantage of their own institutional advantages and corporate strategies (Hall and Soskice, 2001; Pierson, 2001).

Welfare systems are also indirectly linked to economic systems, via the increasing opportunities that individuals achieve through social protection (Gough, 1996; Goodin *et al.*, 1999; Fouarge, 2003; van der Ploeg, 2004). This is related to: (i) stability facing economic shocks and fluctuations, in order to accept technological and organizational changes (Esping Andersen, 1999: ch. 3) and growing international openness (Rodrik, 1998); (ii) reduction of risks for asset-poor entrepreneurs, in order to favour profitable but insecure activities and behaviours (Sinn, 1996; Bowles and Gintis, 2000); (iii) promotion of equal opportunities, notably conciliation between motherhood and female employment (Esping Andersen, 2003); (iv) increase in quantity (education since childhood and lifelong learning) and quality (healthcare) of human capital.

The role of social protection as a productive factor becomes even stronger in our global economy, which amplifies interdependences and risks. Social protection could support structural competitiveness – defined as the long-term ability to provide high and increasing incomes while being exposed to foreign competition, proxied by growth in

productivity² (Gough, 1996) – to the extent that advanced countries rely their economic performances upon high-quality and high-technology production rather than upon low export prices. As a matter of fact, large social expenditure is not harmful for innovation capabilities and productivity growth: e.g. Scandinavian countries and the Netherlands succeed in conjugating their egalitarian social objectives with economic performances (Goodin *et al.*, 1999: 259-264; Castells and Himanen, 2002).

In this work, welfare systems are defined as composed of public social expenditure, private market expenditure (both corporate and out-of-pocket) and family self-servicing (Esping Andersen, 1999: §9.1, 2003: §4). As a matter of fact, both public and total social expenditure are key issues: although public debt and economic distortions depend on public pillar and taxation level, *‘Diminishing public health, pension, or social care expenditure is unlikely to produce any real cost savings since households will compensate with market purchase or with self-servicing. If welfare is externalized to markets, this will not result in appreciably lower net household money outlays’* (Esping Andersen, 2002: 25). The lack of a suitable public protection could even generate a more costly and less effective private social spending (Atkinson, 1999: chs. 4-7; Hacker, 2006).

This view³ needs a new system of social accounting (Adema and Ladaique, 2005), focusing on total net social expenditure (S_{tot}^{net}) as the sum of public net social expenditure (S_{pub}^{net}) and private expenditure for education, healthcare and retirement

² On the contrary, performing competitiveness is defined as the ability to export in contested markets, but that could derive by negative social changes – lower wages, devalued exchange rates, or delocalization of plants – so that this meaning is relevant only at the sector level.

³ Castles and Obinger (2007: 220) do not agree that net total measures provide a more comprehensive account of the extent of the social protection, since only gross public spending (and the taxation system which shapes it) is central to the redistribution purposes of the welfare state. In this paper, overall spending extent and public purposes are regarded as two different issues to analyze separately.

funds (S_{priv}). In turn, public net social expenditure is equal to its gross value, i.e. social protection level such as usually defined (S_{pub}^{gross}), plus tax breaks for social purposes ($TBSP$, e.g. fiscal incentives for private insurances), minus direct taxes on benefits and indirect taxes on consumption (T):

$$S_{tot}^{net} = S_{pub}^{net} + S_{priv} = S_{pub}^{gross} + TBSP - T + S_{priv} \quad (1)$$

The social expenditure level and the fiscal policies necessary to finance it play a contradictory role. In the short term, negative effects of financing public protection or private insurance prevail, by burdening production prices via corporate taxes and labour costs, and by hampering productive agents via economic distortions. In the long term, positive but uncertain effects of benefits increase via better human and social capital, greater propensity to risky behaviour, higher socio-political and macroeconomic stability, lower resistance to technological and organizational changes. High social expenditure is consistent with high productivity to the extent that the long-term benefits offered by social protection to the economic systems outweigh its short-term costs (Mares, 2001; Begg *et al.*, 2003: §4; Zagler and Dürnecker, 2003).

3. Analytical formalization

Acemoglu *et al.* (2006) use a model of endogenous growth driven by innovation and imitation. Entrepreneurs can engage in innovation thanks to their skills (relying on entrepreneurial selection) or adopt already well-established technologies from the frontier (skills play a less important role than in innovation). In order to capture these two dimensions of productivity dynamics, the growth rate of aggregate technology in a continuum of economic sectors is:

$$\frac{A_t}{A_{t-1}} \equiv \frac{\int_0^1 A_t(v) dv}{A_{t-1}} = \int_0^1 \left(\eta \frac{\tilde{A}_{t-1}}{A_{t-1}} + \gamma_t(v) \right) dv = \int_0^1 (\alpha \eta + \gamma_t(v)) dv \quad (2)$$

in which $A_t(v)$ is the productivity of sector v at time t , \tilde{A}_{t-1} is the state of world technology in the previous period, $\eta < 1$ is the rate of adoption of established technologies, $\gamma(v) > 1$ are innovation skills in sector v , and α is the distance from the technological frontier. The closer an economy is to the world technology frontier (α close to 0), the higher the importance of innovation relative to imitation as a source of productivity growth.

It is feasible to include in such a model the effects of social protection on innovation and imitation. For the sake of simplicity, the economy is composed of two sectors with no spillovers: the traditional imitation sector aims to gain price competitiveness and low production costs; the innovation sector aims to gain quality competitiveness and innovation. Both sectors export to the rest of the world, but the globalisation process has different effects on them. Far from the world technological frontier, the traditional sector competes in perfectly competitive markets, which are based on low prices. On the contrary, the innovation sector competes in not perfectly competitive markets, which are based on high quality and incorporated innovation, and which are characterized by a low elasticity of demand on price. As the economy approaches the world technological frontier, its growth rate slows down and the traditional sector loses importance to increase productivity in favour of the innovative sector. A country close to the frontier then needs to shift its productive resources. The question is: does it require more or less social expenditure to support its innovative sector?

As social expenditure (S) increases, both sectors have long-run and indirect benefits (B_η and B_γ) – depending on the structure of the welfare system (W) – and immediate

financial costs. The costs are the same in both sectors, i.e. (i) fiscal receipts as a ratio of GDP (t), which are a positive function of the public social expenditure level, since they are increased by taxes to finance it; (ii) labour costs as a share of GDP (w), which are a positive function of the private social expenditure level⁴, since they are increased by corporate benefits spending or wage claims to support out-of-pocket spending:

$$B_\eta = B_\eta^+(S, W) \quad \text{and} \quad B_\gamma = B_\gamma^+(S, W) \quad (3)$$

$$t = t^+(S) \quad \text{and} \quad w = w^+(S) \quad (4).$$

By arranging (3) and (4), we get γ and η in (2) as functions of S and W :

$$\eta = \tilde{\eta}^+(B_\eta^+, t^+, w^+) = \eta(S, W) \quad \text{and} \quad \gamma = \tilde{\gamma}^+(B_\gamma^+, t^+, w^+) = \gamma(S, W) \quad (5).$$

Partial derivatives $\frac{\partial \eta}{\partial S}$ and $\frac{\partial \gamma}{\partial S}$ depend on the combined effect of costs and benefits.

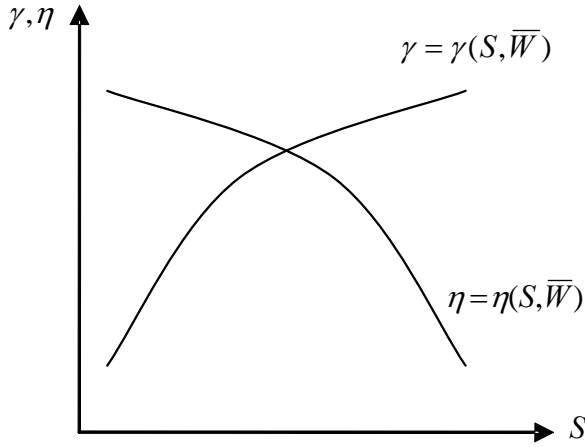
My basic hypothesis is that the net effect of social expenditure is negative for the imitation sector, harmed by increasing prices in the short term, because higher taxes and labour costs raise export prices and reduce imitation capabilities in competitive markets. Conversely, the net effect on innovation capabilities is supposed to be positive, because the productivity-enhancing and long-term ‘social investments’ allowed by taxes and contributions outweigh their short-term costs:

$$\left| \frac{\partial \eta}{\partial t, w} \right| > \frac{\partial \eta}{\partial B_\eta} \quad \text{and} \quad \frac{\partial \gamma}{\partial B_\gamma} > \left| \frac{\partial \gamma}{\partial t, w} \right| \quad (6).$$

Such hypotheses allow to represent the contrasting costs and benefits of social expenditure (Figure 1).

⁴ For the sake of simplicity, social expenditure is not distinct in its public and private components.

Figure 1: Imitation and innovation capabilities as a function of total social expenditure



Source: author's own elaborations.

By inserting (5) in (2), we get productivity growth (\dot{a}) as a function of S and W :

$$\dot{a} = \alpha\eta + \gamma = \alpha \tilde{\eta}^+(B_\eta, t, w) + \tilde{\gamma}^+(B_\gamma, t, w) = \alpha \eta^-(S, W) + \gamma^+(S, W) \quad (7)$$

Partial derivative $\frac{\partial \dot{a}}{\partial S}$ is not self-evident, because it depends on the combination of

positive effects on the innovation sector and negative effects on the traditional sector.

Maximizing equation (7) yields to get the optimal level of S (call it S^*) at which the net marginal costs for the traditional sector (C') are equal to the net marginal benefits for the innovation sector (B')⁵, given the other variables. The first-order condition is:

$$\alpha \eta'_S(S, W) + \gamma'_S(S, W) = 0 \quad (8)$$

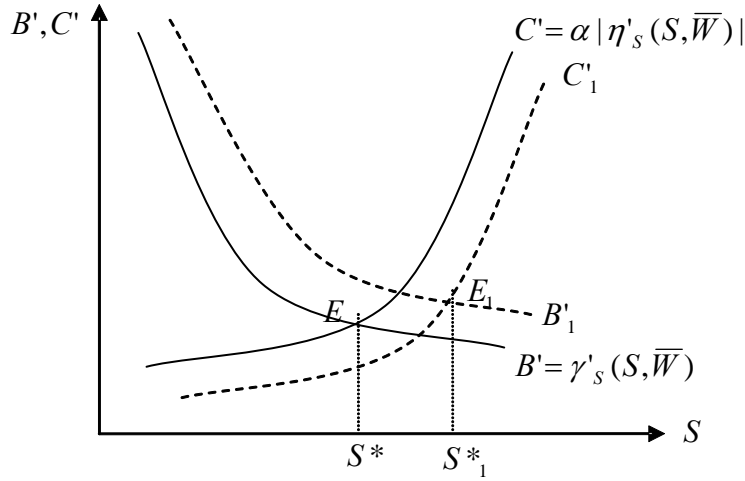
$$\gamma'_S(S, W) = \alpha |\eta'_S(S, W)| \quad (9).$$

If the optimal level S^* is high, then large social expenditure is sustainable, thanks to its well-designed structure and the favourable economic environment. The probability

⁵ It is reasonable that benefits are decreasing in S , because satisfaction of needs begins from basic ones, and that costs are increasing in S , because of growing complexity of administrative management. The costs and benefits of social expenditure can be represented by applying a micro-economic framework, similar to Daly's (1996: chs. 2 and 7) analysis of social and environmental costs related to well-being benefits, provided that its perspective is changed from sustainable development to social protection.

that S^* increases as marginal benefits shift upward from B' to B'_1 or as marginal costs shift downward from C' to C'_1 , according to suitable values of distance (α) and structure (\bar{W}), upon which the probability for equilibrium to hold depends (Figure 2).

Figure 2: Marginal costs and benefits as a function of total social expenditure



Source: author's own elaborations.

Such parameters have to be discussed in order to compare the sustainability of different sets of social and economic institutions. Notably, a structure of social protection able to reduce costs and increase benefits depends on some underlying parameters shaping \bar{W} , namely effective and 'productive' spending, discount rate of benefits, and global pressures.

- 1) A reduced distance from the world technological frontier (α) increases the weight of innovation in comparison to imitation, so enhancing the importance of benefits instead of costs.
- 2) A low discount rate of expected future benefits (i) increases the actual value of the benefits flow, often delayed for whole generations (e.g. human capital) despite their immediate costs.

3) A high effectiveness of social spending (thanks to low distortions, stickiness, administrative costs and wastes) and a high share of ‘productive’ expenditure⁶ (β) increase benefits of a given amount of social protection.

4) Low global pressures – proxied by the dimension of economic and financial exchanges with the rest of the world (δ) – reduce the importance of global competitiveness and consequently increase the sustainability of higher production costs in order to finance social protection.

4. Globalisation, the United States and Europe

The above framework is useful to study the globalisation process, some differences between countries, and the situation of lagging countries such as Italy.

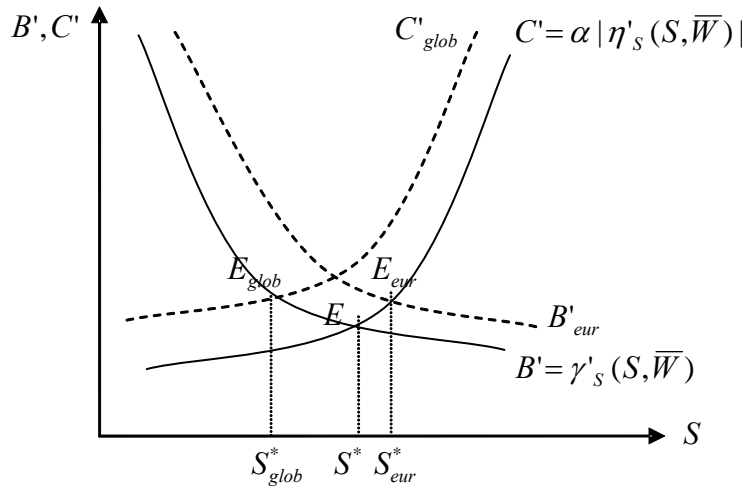
Globalisation. The optimal expenditure level S^* (equilibrium E) is not stable in the long term. As the degree of globalisation increases, social spending becomes more costly⁷, shifting C' upward (C'_{glob}) (Figure 3). But ‘resistance of *status quo*’ prevents taxes and expenditure from being cut in the new equilibrium E_{glob} , because of strong electoral incentives, institutional or informal veto points and path dependency (Pierson, 2001: 411-419). This makes S^* a disequilibrium, where marginal costs are higher than marginal benefits ($|C'_{\text{glob}}| > B'$). Two solutions are feasible: either lowering social and political resistances to rolling back welfare states, or reducing marginal costs and raising marginal benefits. The latter implies an alteration of the structural parameters affecting the position of the two curves, notably in the short term: economic systems

⁶ Notably socioeconomic infrastructures, knowledge and health accumulation, and incentives for women and young people to enter into the workforce (Zagler and Dürnecker, 2003: 405-408).

⁷ Increasing pressures of globalisation process on social protection depend on narrower financing bases on mobile factors, competitiveness costs to maintain higher social standards, less disposable instruments, and political weakness (Rodrik, 1997; Esping Andersen, 1999; Tanzi, 2000).

more biased toward high-technology and R&D-intensive sectors (lower α), or a social expenditure mix more biased toward productive items, with lower administrative costs, distortions, stickiness and wastes (higher β). Of course, it is more difficult to modify the degree of globalisation (δ) or the discount rate (i) in the short term⁸.

Figure 3: Effects of globalisation and country-specific circumstances on marginal costs and benefits



Source: author's own elaborations.

Country-specific conditions. Structural parameters shaping W are country- and time-specific. A comparison between the US and continental Europe (Table A.1) shows interesting institutional and social differences: (i) the best performing country in most technological indexes is the US, so that its distance from the frontier is 0, but many European countries are close to the US; (ii) the amount of international assets and liabilities out of the GDP is high and rising both in the US and in Europe, suggesting a similar degree of globalisation; (iii) social spending in Europe is more effective and

⁸ The former could only be possible in supranational coordinated policies, e.g. a stronger European Union whose continental political level would be closer to the global economic level. The latter depends on cultural and social factors: it could be lower when individuals feel collective long-term responsibility and financial 'short-termism' does not outweigh long-term horizon of social issues.

efficient, due to a lower private management and a larger coverage of people⁹; (iv) the discount rate is lower in Europe, due to a greater social affinity between taxpayers and recipients¹⁰, to a lower perceived chance to move upward, to different ideas about luckiness and laziness, to more inclusive political systems, to a greater role of central government (Alesina *et al.*, 2001; Lindert, 2004a: 179-190). Apart from the distance, other variables suggest that for continental Europe B' shifts upward (B'_{eur}) thanks to its lower discount rate and its higher effectiveness, so that the optimal expenditure level could be a little higher in Europe (S^*_{eur}) than in the US (Figure 3).

Italy. Many scholars stress some major Italian problems in comparison to the rest of continental Europe: (i) sector specialization in medium-low technology (higher distance from the frontier); (ii) persistent corruption and criminality, slow administrative procedures, overly high monetary transfers and excessively low incentives for young people and women to increase their participation in the workforce (lower effectiveness of social expenditure); (iii) low fertility rate and fast ageing (higher discount rate of future benefits). Because of higher marginal costs and lower marginal benefits, the Italian present-day social expenditure, although slightly lower than in other major European countries, could be inconsistent with good economic performances. This could support, from the point of view of the welfare system, the growing amount of literature about the so-called Italian economic decline.

⁹ In the US, ongoing transition from corporate benefits for contracted insurance schemes to fiscal incentives for individual choices implies low control of costs, high advertising expenditure, high use of tax breaks, and low coverage for middle-class workers (Hacker, 2006). E.g. healthcare expenditure in the US is very high, but its coverage and performance are low; Anglo-Saxon pension funds are more costly than European 'pay-as-you-go' system because of their administrative costs, and their performances are more variable.

¹⁰ Notably in the US an increase in income redistribution represents a transfer of money from well-off white people to poor Afro- or Latin-Americans, by so limiting the identification between taxpayers and recipients ('*that could be me*').

5. Empirical evidence

Some simple empirical analyses for the main OECD countries yield interesting outcomes about the relationships between social and economic issues (Table A.2), and reason and effects of different degrees in public involvement¹¹.

1) A principal component analysis (PCA) between social and economic variables confirms no empirical evidence that in advanced countries productive and innovative efforts are significantly correlated to their social expenditure or taxation levels (Figure A.1). The first component (call it ‘social equality’) is positively characterized by social expenditure, fiscal receipts and the European dummy, and negatively characterized by some indexes of social uneasiness (poverty, Gini, infant mortality rate) and the Anglo-Saxon dummy. The second component (call it ‘economic efficiency’) is positively characterized by competitiveness, technology, innovation and *per capita* GDP.

2) There is no trade-off between equality and efficiency, because a low public social expenditure implies an high private spending, so that the shares of national product devoted to social purposes are similar. The net total social expenditure at factor cost (public + private – taxes on benefits + tax breaks for social purposes) is similar in continental Europe (in 2005 France 33.6%, Sweden 29.6%, Germany 30.2%) and in Anglo-Saxon countries (UK 29.3%, US 27.2%)¹². As a consequence, even if their levels of gross public expenditure are very different, some European countries and the US are strong innovators and global exporting countries, because what matters is not only the

¹¹ Social expenditure figures refer to 2005 only, since there are no reliable time series; as a consequence, economic data refer to their annual average from 2003 to 2007. Also competitiveness indexes and social uneasiness indicators are not comparable in different editions of the reports, so last figures only are used.

¹² The gap of 19.9 percentages points between the US and Sweden in gross public social expenditure at factor cost reduces to only 2.4 points in net total social expenditure. Data in Adema and Ladaïque (2005) were updated by OECD in the Social Expenditure Database – SOCX 2008, table 5.5.

total social expenditure but also its structure.

3) The different proportions of public social expenditure to the total

$$\varphi_i = \frac{S_i^{pub}}{S_i} \quad (10),$$

higher in continental Europe than in Anglo-Saxon countries¹³, derive from each countries' preferences about public redistribution. This is also confirmed by the significance of the European and Anglo-Saxon dummies in the PCA. Since such a divergence derives from institutional, social and political preferences, it does not imply *a priori* different innovation capabilities or a gap in productivity. Some scholars wonder whether a twofold equilibrium holds: in the US low equality among people and high market competition between firms, while in continental Europe high social inclusion and strategic interactions between firms, banks and institutions (Scharpf and Schmidt, 2000; Hall and Soskice, 2001; van der Ploeg, 2004; Bénabou, 2004). This is confirmed by the country scores on the two components of PCA, which show two different clusters for continental Europe and Anglo-Saxon countries (the US and New Zealand excluded, although in the same quadrant) (Figure A.2).

4) However, such differences in the public-private mix of social spending do have an impact on effective protection from social needs and on the distribution of social well-being. Europeans are more protected than Anglo-Saxons, thanks to their higher public involvement in benefit provision: '*(...) politics remains the key to who gets what, when and with what effect in the welfare arena*' (Castles and Obinger, 2007: 217). A number of indexes of social uneasiness (U), proxied by the UNDP human poverty index for advanced countries (HPI-2), are negatively and significantly correlated with public

¹³ Public share in continental Europe (φ_{eur} between .86 and .96, the Netherlands excluded) is higher than in the US ($\varphi_{us} = .68$) and in other Anglo-Saxon countries, since European private expenditure is lower.

social expenditure and fiscal receipts (Figure A.3):

$$U = U(\bar{S}_{pub}^+) \quad (11).$$

This is not only a social problem, because an unfair access to social protection limits its redistributive effectiveness, thus harming the channels through which some welfare system elements become productive factors for the economic system.

6. Concluding remarks

Empirical evidence seems to confirm that high levels of social expenditure could be consistent with economic performances, to the extent that some structural conditions are met. Since the design and the structure of the welfare systems are crucial in analyzing their costs and benefits, the total social expenditure levels do not suffice to clarify whether the long-term benefits outweigh their short-term costs. This holds when the social protection structure is efficient and designed to reduce its financial constraints, to ensure protection from growing global risks, and to support productive specialization in high-tech and high-innovation sectors. Therefore, adjusting and recasting should be the priority focus in reforming social protection systems, rather than either rolling back the welfare state or defending its present-day levels. As a matter of fact, the former would imply higher – and not necessarily more efficient – private social spending, while the latter does not guarantee its sustainability over time. Such considerations provide some suggestions in respect of outstanding stylized facts.

1) Economies with different social protection systems can all have good performances because the net total social expenditure and its structure are more important than the gross public expenditure. The portions of the national product devoted to social purposes are similar, because every advanced country is challenged by

analogous issues and growing needs: higher exposure to global shocks, more flexible employment, ageing and less standard families.

2) Differences in the public expenditure levels in advanced countries depend on historical preferences regarding redistribution, according to social affinity, ideas on poverty and social mobility, and political systems. Reached via dissimilar growth paths, such differences usually do not prevent *a priori* high innovation and productivity.

3) Large social protection systems can be thus sustainable and even productivity-enhancing. Since globalisation, technological change and demographic transition imply strong pressures on social protection – by raising its financing costs despite its growing demand – a disequilibrium appears, where marginal costs outweigh their benefits. It is necessary to reduce marginal costs and to increase benefits, via more effective spending items and productive specialization more biased toward high-technology sectors.

4) In lagging countries such as Italy, sector specialization is biased toward medium-low technology and protection schemes are not aimed to support productive or effective expenditure. This is related to the capability of satisfying social needs, which is at the very same time a precondition for productivity growth. Italy thus needs political action to break its low-productivity and low-protection equilibrium, and to approach the socio-economic conditions of the other main European countries.

Appendix: empirical evidence in some OECD countries

Table A.1: Values of structural parameters in different countries

Parameters	Proxies	USA	Europe	Italy
1. Distance from the technological frontier (α)	Difference with the US technological index	Zero	Low	High
2. Effectiveness of the social expenditure (β)	Share of private management, coverage of people, wastes	Low	High	Interm.
3. Degree of globalisation (δ)	International assets and liabilities out of GDP	High	High	High
4. Discount rate of expected future benefits (i)	Social affinity and political inclusion	Low	High	High
Overall effect on optimal expenditure level (S^*)		↓	↑	↓

Source: author's own elaborations.

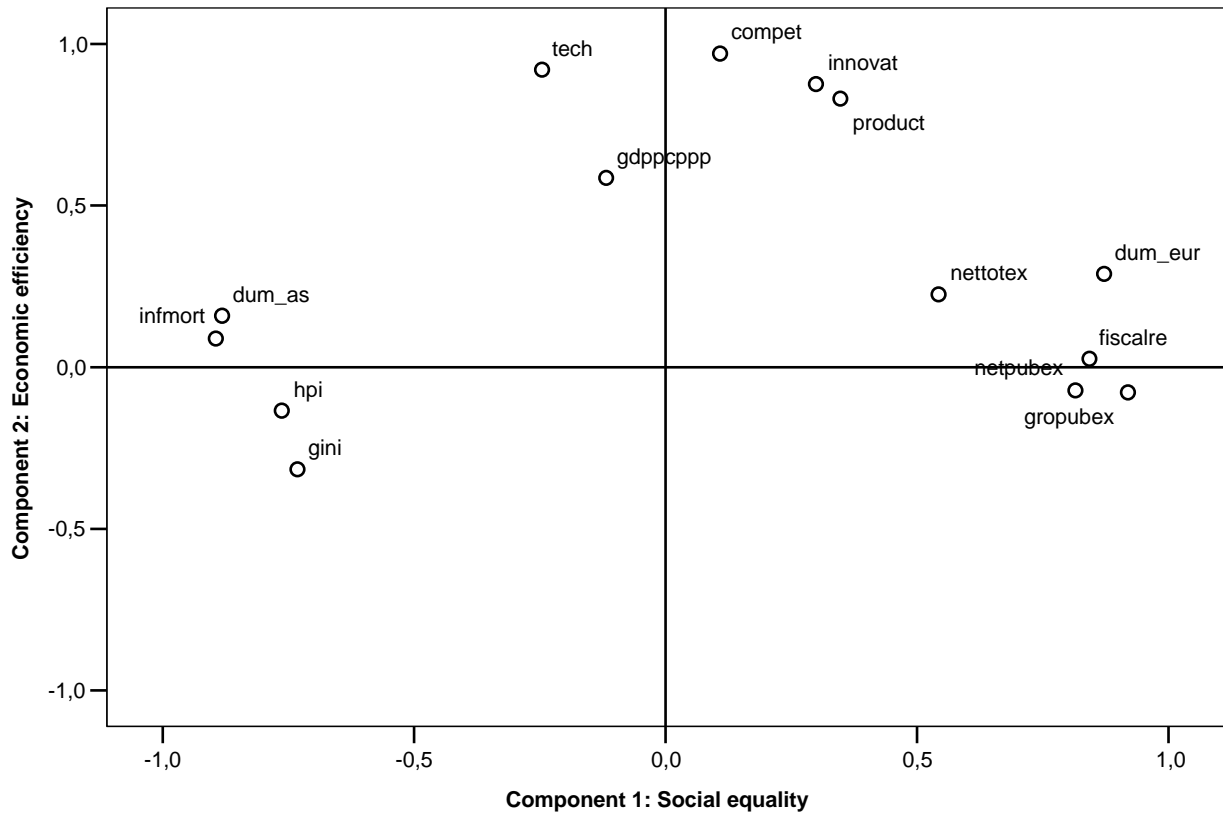
Table A.2: Socio-economic variables in the main OECD countries

Variables	Year	USA	UK	Germ.	France	Italy
<i>Social expenditure</i>						
Gross public (% of GDP)	2005	17.1	24.1	30.0	33.8	28.8
Net public (% of GDP)	2005	18.5	22.7	28.2	30.4	24.8
Net total (% of GDP)	2005	27.2	29.3	30.2	33.6	26.6
Fiscal receipts (% of GDP)	2003-07*	33.1	40.9	43.8	49.8	45.0
<i>Economic performances</i>						
PPP per capita GDP (1.000 USD)	2003-07*	36.8	28.4	26.9	26.5	26.1
Productivity growth (% change)	2003-07*	1.77	1.84	1.07	1.32	0.03
Competitiveness index (1 to 7)	2007	5.67	5.41	5.51	5.18	4.36
Innovation index (1 to 7)	2007	5.68	5.10	5.70	5.08	4.18
Technology index (1 to 7)	2007	5.77	5.53	5.28	5.04	4.38
<i>Social uneasiness</i>						
HPI-2 index	2005	15.4	14.8	10.3	11.2	11.6**
Infant mortality rate (‰)	2005	6.37	5.01	4.08	3.41	5.72
Gini index (1 to 100)	about 2000	40.8	36.0	28.3	32.7	36.0

Notes: (*) Annual average. (**) Earlier data, since 2005 figure is unreliable.

Sources: OECD – SOCX 2008 for net total, net public and gross public social expenditure at factor cost; OECD – Economic Outlook 83 for PPP per capita GDP, productivity growth and fiscal receipts; WEF – Global Competitiveness Report 2007-08 for indexes of competitiveness, innovation and technology; UNDP – Human Development Report 2007-08 for HPI-2, infant mortality rate and Gini index.

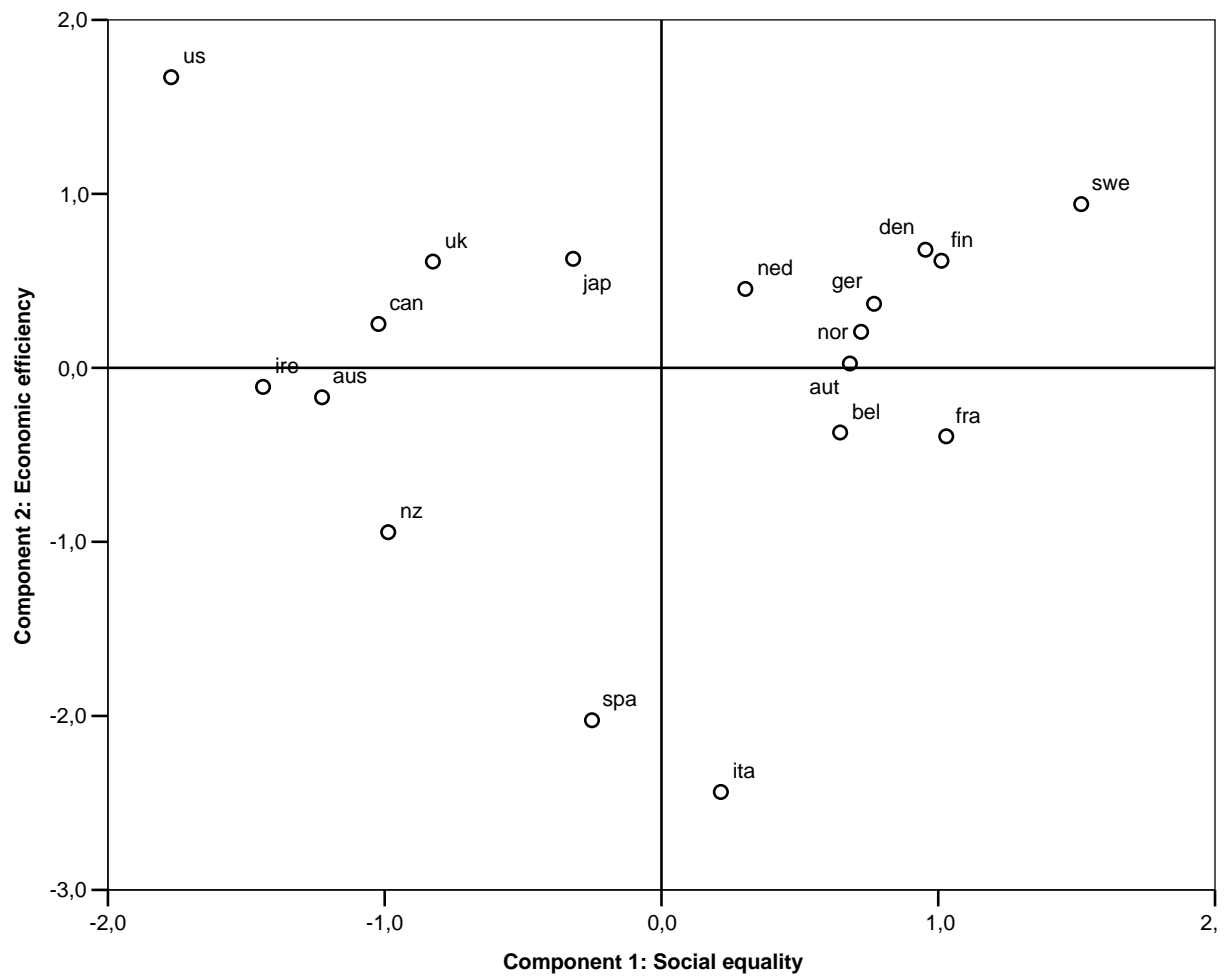
Figure A.1: Loadings of socio-economic variables on the components of PCA



Notes: Component 1: $\lambda = 6.48$ and variance = 46.3%. Component 2: $\lambda = 3.67$ and variance = 26.2%. Total explained variance = 72.5%. Dummy variables denote Anglo-Saxon (dum_as) and continental European countries (dum_eur).

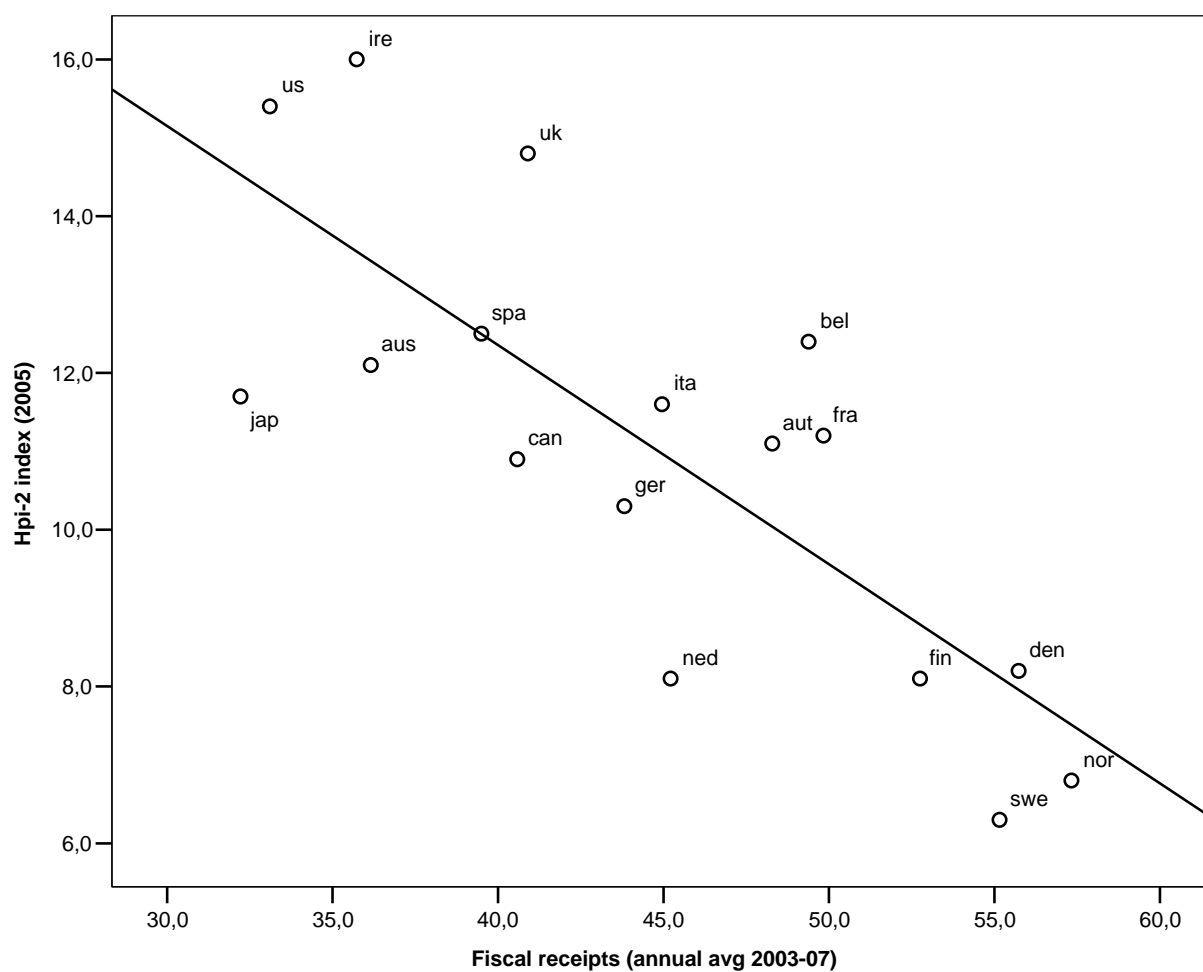
Sources: OECD – SOCX 2008 for net total (nettotex), net public (netpubex) and gross public (gropubex) social expenditure at factor cost; OECD – Economic Outlook 83 for PPP per capita GDP (gdppcPPP), productivity growth (product) and fiscal receipts (fiscalre); WEF – Global Competitiveness Report 2007-08 for indexes of innovation (innovat), competitiveness (compet) and technology (tech); UNDP – Human Development Report 2007-08 for HPI-2 (hpi), infant mortality rate (infmort) and Gini (gini).

Figure A.2: Scores of the countries on the components of PCA



Source: see Figure A.1.

Figure A.3: Social uneasiness and fiscal receipts



Notes: Pearson correlation = -.78 (significant at 1% level).

Sources: OECD – Economic Outlook 83 for fiscal receipts (percent of GDP); UNDP – Human Development Report 2007-08 for HPI-2 index as a proxy of social uneasiness.

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